PCT

CASE CO/2-22[redacted]A/PCT

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Anna R. Maddalena — Anna R. Maddalena — 3/4/05

Type or print name — Signature — Date

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE PCT NATIONAL STAGE APPLICATION OF

JEAN-PIERRE WOLF ET AL.

INTERNATIONAL APPLICATION NO. PCT/EP 03/05801

FILED: JUNE 3, 2003

FOR: MULTIMER FORMS OF MONO- AND BIS-ACYLPHOSPHINE OXIDES

U.S. APPLICATION NO: 10/517,231

35 USC 371 DATE: DECEMBER 7, 2004

Group Art Unit:

Examiner:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 CFR 1.56, Applicants wish to call the Examiner's attention to the references cited on the attached form PTO-1449. Copies of the International Search Report and the references cited therein were supplied when this application entered the U.S. national phase. The International Search Report indicates that U.S. Patents 5,410,060, 4,324,744 and U.S. 5,218,009 are substantively cumulative English language counterparts of EP 0601413, EP 0007508 and EP 0413657 respectively. Enclosed herewith is an English language abstract for DE 2245817.

The Examiner is requested to consider the foregoing information in relation to this application and indicate that each reference was considered by returning a copy of the initialed PTO 1449 form.

Respectfully submitted,

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Encl. Reference
PTO-1449 Form

Tyler A. Stevenson
Agent for Applicants
Reg. No. 46,388

FORM PTO-1449	Docket Number (Optional)	Application Number
INFORMATION DISCLOSURE CITATION IN AN APPLICATION	CO/2-22694/A/PCT	10/517,231
	Applicant: JEAN-PIERRE WOLF ET AL.	
(Use several sheets if necessary)	Filing Date: December 7, 2004	Group Art Unit

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,723,512	3/98	Leppard et al	522	55	
	6,737,549	5/04	Wolf et al	568	14	
	2005/0004247	1/05	Wolf et al	522	8	
	2001/031898	10/01	Wolf et al	568	13	
	5,410,060	4/95	Schroeder et al	546	21	
	4,324,744	4/82	Lechtken et al	260	932	
	5,218,009	6/93	Rutsch et al	522	16	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO
	0601413	6/94	Europe				
	0007508	2/80	Europe				
	2245817	3/74	Germany				
	0413657	2/91	Europe				

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, Etc.)

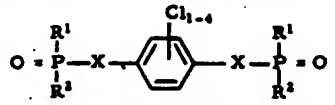
	A. R. Barron et al, Journal of the Chemical Society, Vol. 23, (1987), pp. 1753-1754
	L. Macarie et al., Revista de Chimie, Vol. 53, No. 7, (2002), pp. 568-571
	Derwent Abstract 25165V/14 for DE 2245817 (1974)

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP §609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

25165V/14 *DT 2245-817
DYNAMIT NOBEL AG DYNN 19.09.72
Halogenated di-phosphonic esters - useful for flame proofing plastics, having good compatibility and solubility and low flow temp A60 E11 F06
19.09.73-DT-2245817 (28.03.74) C07f-09/32 C08m-13/28

The novel esters are of formula



(in which, independently, each R^1 is 1-8C alkoxy; R^2 is as R^1, Ph or 2-8C alkyl; X is CH_2 or CO). Their mixts. and isomer mixts. are also claimed.

ADVANTAGES

High P content; good solubility in the common organic solvents; good compatibility with many plastics and fibre raw materials; and relatively low flow temp., facilitating blending with plastics.

PREFERRED

R^1 and R^2 are EtO and X is CH_2; or R^1 and R^2 are different alkoxy gps.; or R^1 is Ph, R^2 EtO and X CH_2.

A8-F3, A8-F4. 2 125

PREPARATION

By reacting trialkyl phosphites or phosphinic esters with ring-halogenated terephthalyl chloride or p-xylylene dichloride, with elimination of alkyl chloride (Arbusov reaction), pref. at 30-250°C.

EXAMPLE

15.35 g (0.045 mole) tetrachloroterephthalyl dichloride and 25 g (0.1 mole) tributyl phosphite were reacted under N_2. The resultant BuCl was distilled off and the reaction temp. rose slowly to 180°C. Elimination of BuCl was complete after 1 hr. The excess tributyl phosphite was distilled off, leaving the phosphonate, m.pt. 43-45°C.